

# Articles

## Placebo Medication Use in Patient Care: A Survey of Medical Interns

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The use of placebo medication, long recognized by clinicians, often has serious practical implications, such as patient deception. Past evidence has suggested that resident physicians tend to misuse placebo medication. Interns from two consecutive years of a residency program were surveyed anonymously to assess their knowledge and use of placebos. Of the 74 interns surveyed, 44 (59%) were familiar with placebo use in patient care. Fifty percent of these interns familiar with placebo use had learned about placebos from another physician. All interns who had learned about placebos during their internships had learned from another physician, whereas interns who had gained their knowledge of placebos as medical students were as likely to have learned from the medical literature as they were to have learned from a physician ( $P = 0.027$ ). Interns aware of placebo use were more likely to consider placebo administration for suspected, factitious pain ( $P = 0.022$ ). The present study uncovered no relationship between interns' estimations of placebo efficacy and the utility they attributed to placebos in assessing a complaint of pain. This suggests that conceptual inconsistencies underlie their use of placebos. Interns often learn of placebos as medical students and are influenced by physician-mentors. Placebo use in patient care is an area of attention for medical educators.

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With reported response rates of 30% to 50%, placebo medication and its effects have been long recognized in medicine.<sup>1</sup> Physicians widely accept placebo use in patient care.<sup>2-5</sup> They consider its use when they suspect factitious pain or non-somatic suffering, or wish to limit a patient's exposure to narcotic analgesics. Placebo use, however, frequently involves patient deception. This deception runs contrary to accepted notions of patient autonomy and informed consent to treatment,<sup>6-8</sup> and a patient's trust may be harmed should he or she discover the deception.<sup>9</sup> Furthermore, physicians' orders for placebos may compromise the ethical integrity of other health care professionals, such as nurses, who often administer the placebo.

A prior study<sup>4</sup> that assessed resident physicians' attitudes toward placebos concluded that these physicians underestimate placebo efficacy and tend to misinterpret a response to placebo as evidence of nonorganic pain. We have little additional, empirical information about house staff use of placebos. This survey was designed to assess medical interns' understanding and use of placebos.

### Methods

The survey consisted of ten open- and closed-ended questions. A placebo was defined as an inactive sub-

stance administered to a patient in place of a medication. Interns were asked about their familiarity with placebo use in patient care. Interns aware of this practice were asked to state when in their training, and from whom, they had learned of placebo use. They were asked to indicate the number of orders for placebos they had written during internship, to identify the placebo medication, and to indicate the number of placebos they had administered directly. Interns were also asked to relate any disagreements with their decision to use a placebo and whether the recipient was aware of its use. All interns were asked to estimate general rates of response to placebo and to describe their understanding of the utility of placebo administration in differentiating organic pain from non-organic pain. They were also asked to describe situations in which they would most likely consider using a placebo. Survey responses were studied using chi-square analysis and paired *t*-tests.

Surveys were distributed seven weeks prior to the end of the internship and collected within four weeks of distribution. Interns were surveyed anonymously, and completion was voluntary. There was no penalty for non-compliance, although telephone reminders encouraged participation.

## Subjects

Subjects were interns from two consecutive years of an internal medicine residency program at a 485-bed university-affiliated community hospital. The survey included interns from the preliminary program ( $n = 59$ ) and categorical program ( $n = 30$ ). The two internship-classes represented 28 medical schools. Of the 89 interns eligible for the survey, 74 (83%) responded; however, 13 surveys were returned partially completed. The profiles of the two internship-classes were similar in gender, degree (MD versus DO), and training program (preliminary versus categorical). The two training programs were dissimilar in that 67% of preliminary interns and 35% of categorical interns were male. Of the preliminary interns, 1 in 50 had graduated from a school of osteopathic medicine, whereas 7 in 20 categorical interns had graduated from a like school.

## Results

### *Knowledge of Placebo Use in Patient Care*

The survey assessed interns' knowledge of placebo use and the source of this knowledge. Of the 74 interns surveyed, 47 (64%) were aware of the clinical practice of using placebos. Of these 47 interns, 44 (94%) described the source of their knowledge of placebo use. Nine had learned of placebo use from more than one source. Half had learned from another physician, 10 (23%) from another intern, 8 (18%) from a resident physician, 6 (14%) from an attending physician, 2 (4.5%) from nursing staff, and 19 (43%) from reading medical literature. The survey revealed no relationship between familiarity with placebo use and degree, training program, or intern gender.

Of the 47 interns familiar with placebo use, 35 (74%) had learned of the practice as medical students. An additional 7 (15%) learned of the practice during their internships. All interns who had learned of placebo use during internship learned from a physician, whereas interns who had learned as medical students were as likely to have learned from the medical literature as they were to have learned from a physician ( $P = 0.027$ ).

### *Use of Placebos*

When asked if they had ordered a placebo during their internship, 45 (96%) of the 47 interns aware of placebo use responded. Of that group, 38 (84%) had never ordered a placebo, and 7 (16%) had ordered 1 ( $n = 4$ ) or 2 ( $n = 3$ ). Only one intern reported having actually administered a placebo. The survey discovered no relationship between interns who had ordered placebos and their program, gender, or how and when they had learned of placebos. Of the ten placebos ordered during internship, two were reported as tablets, two as intravenous saline, and five as intramuscular saline. Interns reported that none of their patients had been aware of placebo use. In five of the ten reported instances, attending physicians were aware of placebo use and none had objected. In one case, however, a nurse disagreed with an intern's order for a placebo.

### *Understanding the Placebo Effect*

When asked to estimate the efficacy of placebo in pain relief, 70 (95%) of 74 interns responded. Of this group, 25 (36%) interns underestimated and 12 (17%) overestimated the response rate. There was no relationship between the interns' estimation of placebo response and prior familiarity with placebo use, training program, medical degree, gender, or source of knowledge of placebo use.

When asked to describe the utility of placebo administration in differentiating factitious or nonsomatic pain from organic pain, all interns responded, and 50 (68%) believed placebo administration to be a useful test. There was no relationship between interns' judgment concerning the utility of placebo administration and their self-reported awareness of placebo use, training program, medical degree, or gender. Interns previously unaware of placebo use did not differ from those aware of placebos in correctly describing placebos' useless role in assessing a complaint of pain. In no instance did the survey reveal a relationship between an intern's estimation of placebo effect and the utility he or she attributed to placebo administration as a test for factitious pain (chi-square test,  $P = 0.537$ ).

### *Circumstances of Use*

Of the 74 interns surveyed, 66 (89%) supplied descriptive data regarding the circumstances in which they would most likely consider using a placebo. The responses were categorized as placebos never used and placebos used for direct patient benefit, suspicion of factitious pain, history of substance abuse, psychiatric illness or psychiatric component to the complaint. Of the 66 interns who supplied data, 32 (48%) were likely to use a placebo when they suspected factitious pain. Interns previously aware of placebo use were more likely than those previously unaware to order a placebo for suspected factitious pain ( $P = 0.022$ ). In addition, 12 (18%) interns said that they would likely prescribe placebos for patients with a history of substance abuse and 11 (17%) said that they would likely prescribe placebos for patients with a history of psychiatric illness or with a suspected psychological component to their complaint. Interns with no prior knowledge of placebo use in patient care appeared more likely to exclude placebo use under any circumstances ( $P = 0.051$ ), although 2 (3%) of the 66 interns who supplied descriptive data said that they would consider using placebos for patient benefit only when all other options and resources had been exhausted. The survey found no significant relationship between circumstances of likely placebo use and intern gender or program.

## Comment

The survey indicates that placebos are used infrequently in the medical service studied, as less than 10% of the interns questioned reported such activity. A striking finding is the poor correlation between interns' estimations of placebo efficacy and their statements about

the usefulness of placebos in assessing pain. This finding suggests that the utility attributed to this use of placebos is inconsistent with interns' recognition of the placebo effect. Interns perceived a patient's response to a placebo as indicative of factitious pain, although a widely-used medical pharmacology text states, "Relief or lack of relief of symptoms upon administration of a placebo is not a reliable basis for determining whether the symptoms have a psychogenic or somatic origin".<sup>10</sup> This survey did not explore the substance of interns' instruction. Such information would assist the development of more explicit material for medical school curricula for use in reinforcing placebo-related concepts. Supervising physicians who accept or tolerate house-officer use of placebos disservice the physician-in-training. Opportunities may be lost both for mentoring house staff in addressing patients' psychological needs and for developing constructive approaches to the "difficult" patient.<sup>11-14</sup>

Interns' knowledge of placebos appears to be influenced by physician-mentoring during medical school studies and internship training. Misinformation may be reinforced by imprecise abstraction in the medical literature, which describes both the power of the placebo and ethical implications of its use. Placebo use is inappropriate as a diagnostic test and unethical when coupled with patient deception. Placebo use may be appropriate when the patient has consented, in advance, to the random integration of placebo medication into his or her pain management regimen. The educators of physicians need to define clearly the appropriate and inappropriate use of placebos.

Although objection to placebo use was rarely reported, the degree of attending physician and nurse concurrence with interns' placebo use is not clear. Most placebos, we assume, were administered by nurses, because only one intern described administering a placebo. An assessment of nursing experience with placebo use would be enlightening.

Of the interns eligible for inclusion in the study, 15 (17%) did not respond. These interns may have avoided participation because they suspect that placebo use is unethical. On the other hand, nonresponders may have been unfamiliar with the subject, thus uninterested in the study. The nonresponders' bias is therefore unclear. The high participation rate of eligible interns, however, limits any effect this bias may have had.

Interns' continued misunderstanding of placebos opens the door for misuse and may place patients at risk for deception and undertreatment. Patients with either "unconvincing" clinical presentations or psychiatric illnesses appear to be most vulnerable. Some patients who are given placebos will immediately benefit through the relief of symptoms without the risk of side effects from medication. If discovered, however, the attendant deception may jeopardize both the patient's trust in health care professionals and his or her future care. Furthermore, routine placebo use by physicians could eventually harm the reputations and integrity of medical

professionals. A management alternative more constructive than placebo use is available in virtually all clinical circumstances.

We do have methodological concerns with the study. First, the limited number of participating subjects may have rendered additional trends and subset findings indiscernible. The subgroup of placebo-ordering interns was too small, for instance, to assess group-specific characteristics. Second, surveying two internship classes in sequential years may have introduced a bias in the second class of interns who were supervised by residents who were survey participants during the preceding year. The house staff, however, received no formal placebo-related instruction during the study period. Relying on interns' recollection of events of the past year is, admittedly, fraught with imprecision, but precise mechanisms for tracking placebo use are difficult to develop. Placebos used are commonly saline flushes, for which neither pharmacy nor nursing accounts. Simultaneous surveys of nursing staff might provide some corroboration of the interns' reports. Third, the definition of placebo used for this study may have contributed to under-reporting. This definition, chosen for its simplicity, does not encompass impure placebos, which are active substances that have no problem-related activity. The respondents, however, did not appear to appreciate this distinction. Furthermore, questions of definition should not affect interns' understanding or likely use of placebos.

This study provides important insights into house-staff use of placebos. The data corroborate earlier evidence that interns' perception of the utility of placebos in testing for factitious pain is inconsistent with their understanding of the placebo effect. This knowledge is acquired early in training and is largely mentor-dependent. Placebo use in patient care is an area requiring attention for physicians-in-training and for the educators of medical students and house staff.

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